

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 27 March 2001 (27.03.01)	
<b>International application No.</b> PCT/EP00/06176	<b>Applicant's or agent's file reference</b> P-TREFIL-2/W
<b>International filing date</b> (day/month/year) 03 July 2000 (03.07.00)	<b>Priority date</b> (day/month/year) 23 July 1999 (23.07.99)
<b>Applicant</b> FELGEN, Fernand	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 30 December 2000 (30.12.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	<b>Authorized officer</b>  Juan Cruz  Telephone No.: (41-22) 338.83.38
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REC'D 08 OCT 2001

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P-TREFIL-2/W		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP00/06176	International filing date (day/month/year) 03/07/2000	Priority date (day/month/year) 23/07/1999	
International Patent Classification (IPC) or national classification and IPC C23C2/20			
Applicant TREFILARBED BISSEN S.A. et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 30/12/2000	Date of completion of this report 04.10.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Teppo, K-M Telephone No. +49 89 2399 8130 

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/06176

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, pages:

1-4,6,7 as originally filed

5 as received on 17/08/2001 with letter of 17/08/2001

### Claims, No.:

1-12 as originally filed

### Drawings, sheets:

1/2,2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/06176

- ☐ the description,      pages:  
☐ the claims,          Nos.:  
☐ the drawings,        sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-12
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

## VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. CITED DOCUMENTS**

Reference is made to the following documents:

- D1: EP-A-0 038 975 (BETHLEHEM STEEL CORPORATION) 4 November 1981 (1981-11-04)
- D2: EP-A-0 038 036 (BETHLEHEM STEEL CORPORATION) 21 October 1981 (1981-10-21)
- D3: PATENT ABSTRACTS OF JAPAN vol. 005, no. 168 (C-077), 27 October 1981 (1981-10-27) & JP 56 098466 A (NIPPON STEEL CORP), 7 August 1981 (1981-08-07)
- D4: PATENT ABSTRACTS OF JAPAN vol. 1995, no. 01, 28 February 1995 (1995-02-28) & JP 06 287736 A (MITSUBISHI HEAVY IND LTD), 11 October 1994 (1994-10-11)
- D5: PATENT ABSTRACTS OF JAPAN vol. 1999, no. 02, 26 February 1999 (1999-02-26) & JP 10 298727 A (NKK CORP), 10 November 1998 (1998-11-10)
- D6: EP-A-0 566 497 (CLECIM) 20 October 1993 (1993-10-20)
- D7: FR-A-2 136 001 (DEMAG) 22 December 1972 (1972-12-22)

2. Document D1, which is regarded as the closest prior art, discloses a gas wiping nozzle for a wire coating apparatus, comprising a passage, for a wire coated with molten metal being drawn therethrough along a central axis, said passage including: a converging inlet section through which said wire coated with molten metal enters into said gas wiping nozzle (see in D1: claims 1 and 18, fig. 2 and p. 14, l. 15-25); a wiping section (fig. 2 (134)) arranged downstream of said inlet section (fig. 2 (129)) and having therein gas outlet means (134) surrounding said passage for blowing wiping gas against the surface of said wire being drawn therethrough; so that the upper portion of the converging inlet section (129) extends to the gas wiping orifice (134) (see D1 p. 14, l. 28-30 and fig. 2) i.e. at the level of the gas wiping orifice (134) its dimension equals that of the passage (129).

Thus, D1 differs from the claim 1 of the current application in that there is no protruding lip in D1 to protect said gas outlet means (134) in said wiping section from direct contact with the coated wire. This is also the case in D2. The protruding lip of the current application has the advantage that the molten metal will remain under the lip and flow down to the inlet section. Thus, the molten metal will not fill the gas outlet means and the gas wiping nozzle will not have to be cleaned or replaced. Thus the subject-matter of claims 1-12 is regarded as novel and inventive.

3. None of the documents D3-D7 discloses or suggests such the protruding lip of the current claim 1.
4. Documents D3-D5, which are also related to gas wiping nozzles, appear to disclose position detecting means surrounding a passage, for detecting a wire deviating from said central axis in said passage. In D4 and D5 this is achieved with magnets i.e. through the use of induction sensors.
5. D6, a document about air knives, also discloses position detecting means surrounding a passage, for detecting a wire deviating from said central axis in said passage (claim 10, fig. 4, col. 9, l. 1-10). The chamber (3) in fig. 2 of D6 can be regarded as a gas equalization chamber. Moreover, there are also pressure sensors for measuring the wiping gas pressure in D6 (col. 7, l. 12-32).
6. Document D7 discloses a plant for coating a continuously moving strip including a turbine rotor that is situated in a chamber and rotated by the wiping gas (claims 1 and 2). The number of rotations is measured (p. 3, l. 10-16).

#### **Re Item VII**

#### **Certain defects in the international application**

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D7 is not mentioned in the description, nor are these documents identified therein.

that the metallic ring 30 and the wire 12 serve as a switch that triggers an alarm in case of contact between the wire 12 and the lip 28. An operator warned by the alarm can stop or intervene in the coating process to repair the malfunction.

Turning now to Fig.3, four sensors 36 are arranged at the same level downstream the gas outlet slit 26, in the passage walls, and are regularly spaced about the circumference of the passage 16. These four sensors 36 are part of position detecting means, enabling the detection of a wire 12 deviating from the central axis 20, before it contacts the lip 28.

The configuration shown in Fig.3 is e.g. suitable for temperature or inductive sensors. The four sensors 36 deliver four signals which are permanently compared to each other by the position detecting means. When the wire 12 is in the center of the passage 16, i.e. aligned along the central axis 20, the four sensors 36 deliver the same signal. Hence, if one of the signals differs from the others, the wire 12 has deviated from the central axis 20.

It is possible to detect the position of the wire 12 by using optical sensors, such as light beams and photoelectric cells.

A further possibility is the use of two perpendicular laser beams impinging on the wire 12. When a wire 12 deviates from the central axis 20, the laser beam reflects on the opposite passage wall instead of reflecting on the wire 12. The return time of the laser beam increases, thereby signaling the deviation of the wire 12.

Fig.4 shows a longitudinal section of a second nozzle 38. As in Fig.1, a wire 12 is drawn through the nozzle 38 along a central axis 20, via a passage 16, in the direction indicated by arrow 21. The wire 12 enters the nozzle 38 through a converging inlet section 40, passes through a wiping section 42, then through a tubular section 44, and exits the nozzle 38 through a diverging section 46. The wiping section 42 comprises a gas outlet slit 26 for wiping excess molten metal off the surface of the wire 12. A lip 28 equipped with a metallic ring 30, similar to the lip of Fig.1, is located just before the gas outlet slit 26. As explained above, the lip 28 protects the gas outlet slit 26 from direct contact with the wire 12. The arrow 48 indicates a gas inlet 49 in an equalization chamber 50 surrounding the

that the metallic ring 30 and the wire 12 serve as a switch that triggers an alarm in case of contact between the wire 12 and the lip 28. An operator warned by the alarm can stop or intervene in the coating process to repair the malfunction.

Turning now to Fig.3, four sensors 36 are arranged at the same level downstream the gas outlet slit 26, in the passage walls, and are regularly spaced about the circumference of the passage 16. These four sensors 36 are part of position detecting means, enabling the detection of a wire 12 deviating from the central axis 20, before it contacts the lip 28.

The configuration shown in Fig.3 is e.g. suitable for temperature or inductive sensors. The four sensors 26 deliver four signals which are permanently compared to each other by the position detecting means. When the wire 12 is in the center of the passage 16, i.e. aligned along the central axis 20, the four sensors 36 deliver the same signal. Hence, if one of the signals differs from the others, the wire 12 has deviated from the central axis 20.

It is possible to detect the position of the wire 12 by using optical sensors, such as light beams and photoelectric cells.

A further possibility is the use of two perpendicular laser beams impinging on the wire 12. When a wire 12 deviates from the central axis 20, the laser beam reflects on the opposite passage wall instead of reflecting on the wire 12. The return time of the laser beam increases, thereby signaling the deviation of the wire 12.

Fig.4 shows a longitudinal section of a second nozzle 38. As in Fig.1, a wire 12 is drawn through the nozzle 38 along a central axis 20, via a passage 16, in the direction indicated by arrow 21. The wire 12 enters the nozzle 38 through a converging inlet section 40, passes through a wiping section 42, then through a tubular section 44, and exits the nozzle 38 through a diverging section 46. The wiping section 42 comprises a gas outlet slit 26 for wiping excess molten metal off the surface of the wire 12. A lip 28 equipped with a metallic ring 30, similar to the lip of Fig.1, is located just before the gas outlet slit 26. As explained above, the lip 28 protects the gas outlet slit 26 from direct contact with the wire 12. The arrow 48 indicates a gas inlet 49 in an equalization chamber 50 surrounding the



## PATENT COOPERATION TREATY

PCT

NOTICE INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

SCHMITT, Armand

Office Ernest B. Freylinger 19A  
Boite Postale 8L-8001 Strassen  
LUXEMBOURG

mld

09 -02- 2001

iao

OFFICE FREYLINGER

dwy

see

mgn

nex

ghs

smr

cer

cdm

scy

ash

cny

## IMPORTANT NOTICE

Date of mailing (day/month/year)

01 February 2001 (01.02.01)

Applicant's or agent's file reference

P-TREFIL-2/W

International application No.

PCT/EP00/06176

International filing date (day/month/year)

03 July 2000 (03.07.00)

Priority date (day/month/year)

23 July 1999 (23.07.99)

Applicant

TREFILARBED BISSEN S.A. et al

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:  
AU,KP,KR,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE,AG,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,BZ,CA,CH,CN,CR,CU,CZ,DE,DK,DM,DZ,EA,EE,EP,ES,  
FI,GB,GD,GE,GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,  
MN,MW,MX,MZ,NO,NZ,OA,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,  
The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on  
01 February 2001 (01.02.01) under No. WO 01/07675

## REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

## REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

J. Zahra

Telephone No. (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

SCHMITT, Armand  
Office Ernest T. Freylinger S.A.  
Boîte Postale 8  
L-8001 Strassen  
LUXEMBOURG

Date of mailing (day/month/year) 30 August 2000 (30.08.00)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference P-TREFIL-2/W	
International application No. PCT/EP00/06176	International filing date (day/month/year) 03 July 2000 (03.07.00)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 23 July 1999 (23.07.99)
Applicant TREFILARBED BISSEN S.A. et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
23 July 1999 (23.07.99)	90421	LU	14 Augu 2000 (14.08.00)

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

R. Raissi

Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>P-TREFIL-2/W</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/EP 00/06176</b>	International filing date (day/month/year) <b>03/07/2000</b>	(Earliest) Priority Date (day/month/year) <b>23/07/1999</b>
Applicant <b>TREFILARBED BISSEN S.A.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 00/06176

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C23C2/20

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C23C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ, WPI Data, EP0-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 038 975 A (BETHLEHEM STEEL CORPORATION) 4 November 1981 (1981-11-04) figure 2 ---	1
A	EP 0 038 036 A (BETHLEHEM STEEL CORPORATION) 21 October 1981 (1981-10-21) figure 6 ---	1
A	PATENT ABSTRACTS OF JAPAN vol. 005, no. 168 (C-077), 27 October 1981 (1981-10-27) & JP 56 098466 A (NIPPON STEEL CORP), 7 August 1981 (1981-08-07) abstract --- -/--	4, 5

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

24 October 2000

Date of mailing of the international search report

31/10/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Elsen, D

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 00/06176

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 1995, no. 01, 28 February 1995 (1995-02-28) & JP 06 287736 A (MITSUBISHI HEAVY IND LTD), 11 October 1994 (1994-10-11) abstract ---	4,5
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 02, 26 February 1999 (1999-02-26) & JP 10 298727 A (NKK CORP), 10 November 1998 (1998-11-10) abstract ---	4,5
A	EP 0 566 497 A (CLECIM) 20 October 1993 (1993-10-20) claims 1,10,11; figures 1-4 ---	4,5,7,8
A	FR 2 136 001 A (DEMAG) 22 December 1972 (1972-12-22) claims 1-5; figures 1-3 ---	9-12
A	EP 0 103 238 A (FONTAINE) 21 March 1984 (1984-03-21) claims 1-8; figures 1-4 -----	11

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/06176

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 38975	A	04-11-1981	US 4339480 A	13-07-1982
			AR 226101 A	31-05-1982
			AT 10756 T	15-12-1984
			AU 539396 B	27-09-1984
			AU 6939481 A	15-10-1981
			BR 8102221 A	13-10-1981
			CA 1177341 A	06-11-1984
			DE 3167680 D	24-01-1985
			DK 161781 A	12-10-1981
			ES 501252 D	01-04-1983
			ES 8305425 A	01-07-1983
			ES 512216 D	01-04-1983
			ES 8305426 A	01-07-1983
			FI 811109 A	12-10-1981
			GB 2073785 A,B	21-10-1981
			GR 75197 A	13-07-1984
			IN 155747 A	02-03-1985
			JP 1506760 C	13-07-1989
			JP 56163252 A	15-12-1981
			JP 63054785 B	31-10-1988
			JP 63317655 A	26-12-1988
			NO 811260 A	12-10-1981
			NZ 196770 A	19-10-1984
			YU 93381 A	30-06-1984
			ZA 8102394 A	28-04-1982
EP 38036	A	21-10-1981	US 4287238 A	01-09-1981
			AT 8667 T	15-08-1984
			AU 537944 B	19-07-1984
			AU 6939381 A	15-10-1981
			CA 1130662 A	31-08-1982
			DE 3164995 D	30-08-1984
			JP 56156746 A	03-12-1981
			ZA 8102368 A	28-04-1982
JP 56098466	A	07-08-1981	JP 1020225 B	14-04-1989
			JP 1535876 C	21-12-1989
JP 06287736	A	11-10-1994	NONE	
JP 10298727	A	10-11-1998	NONE	
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/06176

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 103238	A	JP 2000979 B	10-01-1990
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<hr/>			

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

SCHMITT, Armand  
OFFICE ERNEST T. FREYLINGER S.A.  
B.P. 48  
8001 Strassen  
LUXEMBOURG

## PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT  
(PCT Rule 71.1)

Date of mailing (day/month/year)	04.10.2001
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Applicant's or agent's file reference P-TREFIL-2/W	<b>IMPORTANT NOTIFICATION</b>
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International application No. PCT/EP00/06176	International filing date (day/month/year) 03/07/2000	Priority date (day/month/year) 23/07/1999
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Applicant TREFILARBED BISSEN S.A. et al.
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1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/	Authorized officer
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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>P-TREFIL-2/W</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <b>FOR FURTHER ACTION</b> </div> <div style="width: 60%;">           See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)         </div> </div>	
International application No. <b>PCT/EP00/06176</b>	International filing date ( <i>day/month/year</i> ) <b>03/07/2000</b>	Priority date ( <i>day/month/year</i> ) <b>23/07/1999</b>
International Patent Classification (IPC) or national classification and IPC <b>C23C2/20</b>		
Applicant <b>TREFILARBED BISSEN S.A. et al.</b>		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 1 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>		
Date of submission of the demand  <b>30/12/2000</b>	Date of completion of this report  <b>04.10.2001</b>	
Name and mailing address of the international preliminary examining authority:  <div style="display: flex; align-items: center;"> <div>             European Patent Office              D-80298 Munich              Tel. +49 89 2399 - 0 Tx: 523656 epmu d              Fax: +49 89 2399 - 4465           </div> </div>	Authorized officer  <b>Teppo, K-M</b>  Telephone No. +49 89 2399 8130	



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/06176

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, pages:

1-4,6,7 as originally filed

5 as received on 17/08/2001 with letter of 17/08/2001

### Claims, No.:

1-12 as originally filed

### Drawings, sheets:

1/2,2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
  - ☐ the language of publication of the international application (under Rule 48.3(b)).
  - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
  - ☐ filed together with the international application in computer readable form.
  - ☐ furnished subsequently to this Authority in written form.
  - ☐ furnished subsequently to this Authority in computer readable form.
  - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
  - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP00/06176

- ☐ the description,      pages:  
☐ the claims,      Nos.:  
☐ the drawings,      sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-12
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. CITED DOCUMENTS**

Reference is made to the following documents:

- D1: EP-A-0 038 975 (BETHLEHEM STEEL CORPORATION) 4 November 1981 (1981-11-04)
- D2: EP-A-0 038 036 (BETHLEHEM STEEL CORPORATION) 21 October 1981 (1981-10-21)
- D3: PATENT ABSTRACTS OF JAPAN vol. 005, no. 168 (C-077), 27 October 1981 (1981-10-27) & JP 56 098466 A (NIPPON STEEL CORP), 7 August 1981 (1981-08-07)
- D4: PATENT ABSTRACTS OF JAPAN vol. 1995, no. 01, 28 February 1995 (1995-02-28) & JP 06 287736 A (MITSUBISHI HEAVY IND LTD), 11 October 1994 (1994-10-11)
- D5: PATENT ABSTRACTS OF JAPAN vol. 1999, no. 02, 26 February 1999 (1999-02-26) & JP 10 298727 A (NKK CORP), 10 November 1998 (1998-11-10)
- D6: EP-A-0 566 497 (CLECIM) 20 October 1993 (1993-10-20)
- D7: FR-A-2 136 001 (DEMAG) 22 December 1972 (1972-12-22)

2. Document D1, which is regarded as the closest prior art, discloses a gas wiping nozzle for a wire coating apparatus, comprising a passage, for a wire coated with molten metal being drawn therethrough along a central axis, said passage including: a converging inlet section through which said wire coated with molten metal enters into said gas wiping nozzle (see in D1: claims 1 and 18, fig. 2 and p. 14, l. 15-25); a wiping section (fig. 2 (134)) arranged downstream of said inlet section (fig. 2 (129)) and having therein gas outlet means (134) surrounding said passage for blowing wiping gas against the surface of said wire being drawn therethrough; so that the upper portion of the converging inlet section (129) extends to the gas wiping orifice (134) (see D1 p. 14, l. 28-30 and fig. 2) i.e. at the level of the gas wiping orifice (134) its dimension equals that of the passage (129).

Thus, D1 differs from the claim 1 of the current application in that there is no protruding lip in D1 to protect said gas outlet means (134) in said wiping section from direct contact with the coated wire. This is also the case in D2. The protruding lip of the current application has the advantage that the molten metal will remain under the lip and flow down to the inlet section. Thus, the molten metal will not fill the gas outlet means and the gas wiping nozzle will not have to be cleaned or replaced. Thus the subject-matter of claims 1-12 is regarded as novel and inventive.

3. None of the documents D3-D7 discloses or suggests such the protruding lip of the current claim 1.
4. Documents D3-D5, which are also related to gas wiping nozzles, appear to disclose position detecting means surrounding a passage, for detecting a wire deviating from said central axis in said passage. In D4 and D5 this is achieved with magnets i.e. through the use of induction sensors.
5. D6, a document about air knives, also discloses position detecting means surrounding a passage, for detecting a wire deviating from said central axis in said passage (claim 10, fig. 4, col. 9, l. 1-10). The chamber (3) in fig. 2 of D6 can be regarded as a gas equalization chamber. Moreover, there are also pressure sensors for measuring the wiping gas pressure in D6 (col. 7, l. 12-32).
6. Document D7 discloses a plant for coating a continuously moving strip including a turbine rotor that is situated in a chamber and rotated by the wiping gas (claims 1 and 2). The number of rotations is measured (p. 3, l. 10-16).

**Re Item VII**

**Certain defects in the international application**

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D7 is not mentioned in the description, nor are these documents identified therein.